NAREL PROJECT ACCEPTANCE FORM (PAF)

Receipt of this Project Acceptance Form acknowledges NAREL's acceptance of the project as described below. If any client requests deviate from NAREL's routine protocols, see the *Notes to Client* section on page 2 and any attached Analytical Protocol Speciation Alternate Proposal (APSAP) forms. Call the NAREL Analytical Services Coordinator (ASC) at (334) 270-3433 with any questions or concerns.

Request Made By:	Daniel Gaughan	Request Date:	04/13/2016
Title:	OSC		
Office/Region:	Region 2, Edison		
Address:	2890 Woodbridge Ave., MS-211, Edison, NJ 08873		
Address:			
Phone:	732-906-6984	FAX:	732-906-6182
E-mail:	Gaughan.daniel@epa.gov		

NAREL CLASSIFICATIONS AND APPROVALS

NAREL Project Name: **Canadian Ra & U Corp Prefix: R2CRU**

Title	Signature	Date
Analytical Services Coordinator (ASC)	Sonya B Hudson	4/14/16
Radiation Safety Officer	[signature]	4-14-16
Safety, Health & Environmental Manager	[signature]	4-14-16
Hazardous Waste Officer	[signature]	4-14-16
Quality Assurance Manager	Yolanda Herbert	4/14/16
Sample Preparation Manager	Cynthia White	4-14-16
Counting Room Team Leader	[signature]	4-14-16
Radiochemistry Technical Manager	Cynthia White	4-14-16
Hazardous-Waste Technical Director (if applicable)	[signature]	4/14/16
Radiochemistry Data Coordinator (RDC)	Sonya B Hudson	4/14/16
CERLS Director	Cynthia White	4-14-16
Other		

* Please email client informing them that NAREL uses our own in-house methods. VSH 4/14/16

PROJECT DESCRIPTION

Site Name: Canadian Radium & Uranium QAPP Received: Yes ☒ No ☐

Site Location (Region, State, City): Region 2, NY, Mt. Kisco

EPA Facility ID: _____ and/or CERCLIS ID Number:

Site Program Type:

Site History and Relationship to Samples: From 1943 until approximately 1966, the CRU facility operations at the Site included the recovery of uranium and other radioactive elements from uranium-bearing sludge, old instrumentation, and watch dials. This work began as part of the federal government's Manhattan Engineering District (Manhattan Project). From 1943 to the 1950s, the primary product was uranium; subsequently, radium became the principal product until the facility's closure. According to a Village of Mount Kisco memorandum, in 1957, CRU pleaded guilty to charges of allowing three employees to be overexposed to radiation. Analytical results from recent site investigations identified elevated levels of gamma radiation in site soils. Specifically, above-background concentrations of radium-226 were identified in soil samples collected from locations throughout the Site during the August 2015 Removal Assessment soil sampling event. EPA is conducting an additional radiological survey and soil sampling event to identify additional source areas and to delineate the extent of on-site radioactive contamination.

Handling Precautions:

Known or Suspected Hazards:

☒ Radiochemicals ☐ Hazardous Chemicals ☐ Biohazards

ANALYTICAL REQUEST

Attach Analytical Protocol Specification forms, if any

Number of Samples and Matrices:	Soil	Sediment	Water	Air Filter	Vegetation	Other	
	51						

Analyses	Request	Notes to Client
Gamma Spectrometry	☐	
Gamma Spectrometry (21-day ingrowth)	☒	See list of requested nuclides below.
Gross Alpha/Beta	☐	
Tritium (water only)	☐	
Iodine-131 (water only)	☐	
Strontium	☐	
Radium-226	☐	
Radium-228	☐	
Americium	☐	
Plutonium	☐	
Uranium	☒	
Thorium	☒	
Metals	☐	

Sample Collection / Preparation:	Yes ☐	No ☐	Comments

Expected Sampling Date: April 4 – 8, 2016

Shipment Date (ETA at NAREL): 2006-01-01Week of April 18, 2016

Other Comments: Client requests reporting the following nuclides by gamma analysis: Cs-137, Ra-226, Ra-228, Ac-228, Bi-210, Bi-212, Bi-214, K-40, Pb-210, Pb-212, Pb-214, Th-234, & Tl-208.

Client requests the following isotopic uranium and thorium nuclides be reported: Th-228, Th-230, Th-232, U-233/234, U-235/236, & U-238.

Please see the ASPAP for alternate proposal to client requests.

Analytical Protocol Specification Alternate Proposal (APSAP)

Site/Project Name: Canadian Radium & Uranium

Brief description of client requirements that cannot be met and NAREL's proposed alternatives:

NAREL is unable to report Bi-210 by gamma analysis. There is no alternative proposal. NAREL does not report both the Ac-228 and Ra-228 nuclides by gamma analysis. NAREL only reports the Ra-228 which is in equilibrium with the Ac-228. NAREL typically does not report Ra-226 in soils because of interferences from U-235. NAREL will report Ra-226 at the client's request, but the result will be flagged as estimated. For isotopic uranium analysis, NAREL does not report U-233 or U-236.

Alternate MQOs

Analytical QC

Batch size: □ 20 samples □ Other _____		
QC Sample Type	**Frequency**	**Evaluation Criteria**
□ Method blank		
□ Duplicate		
□ Laboratory control sample		
□ Matrix spike		
□ Matrix spike duplicate		

Alternate Analytical Process

Activity	Proposed Alternative
Sample receipt and inspection	
Laboratory sample preparation	
Sample dissolution	
Chemical separations	
Preparing sources for counting	
Nuclear counting	
Data reduction and reporting	
Sample disposal	
Other	

Alternate Turnaround Time

Analysis	Proposed Alternative

Requester's signature: _____ Date: _____